

WHAT IS CLAIMED IS:

1. A disk drive comprising:

a disk medium including tracks each including a data area and a servo area, and a non-servo area
5 composed of a track not including the servo area;

a head configured to execute reading or writing of data with respect to the data area or reading of servo data from the servo area;

10 an actuator to position the head at a target track on the disk medium; and

a controller which drives and controls the actuator by first velocity control using the servo data read out from the servo area by the head so as to move the head to the target track, wherein

15 in the case where the non-servo range is included in a moving range of the head, the controller executes second velocity control for the head to pass the non-servo range at a velocity calculated based on a moving distance of the non-servo range.

20 2. The disk drive according to claim 1, further comprising:

a storage unit having stored therein information for identifying the non-servo range, wherein

25 the controller determines whether or not the non-servo range is included in the moving range of the head according to the information.

3. The disk drive according to claim 1, wherein,

on the disk medium, non-data track areas are set with respect to tracks adjacent to the non-servo range, the non-data track areas being disabled to use the data area but enabled to read out the servo data from the servo area.

4. The disk drive according to claim 3, further comprising:

a storage unit having stored therein information for identifying the non-data track areas, wherein the controller identifies the non-data track areas according to the information.

5. The disk drive according to claim 1, wherein the controller executes the second velocity control in which the moving velocity of the head for passing the non-servo range is calculated using the servo data obtained from the servo area included in a track adjacent to or in the vicinity of the non-servo range.

6. The disk drive according to claim 1, wherein the controller sets the non-data track areas with respect to the tracks adjacent to the non-servo range, the non-data track areas being disabled to use the data area but enabled to read out the servo data from the servo area, and

executes the second velocity control in which the moving velocity of the head for passing the non-servo range is calculated using the servo data obtained from

the servo area of each of the non-data track areas.

7. The disk drive according to claim 1, wherein
the controller executes the second velocity
control in which the moving velocity of the head for
5 passing the non-servo range is calculated using the
servo data obtained from the servo area included in
the track adjacent to or in the vicinity of the non-
servo range, and

when the head overshoots the target track with
10 the seek operation by the second velocity control, the
controller drives and controls the actuator so as to
move the head up to the target track based on the
servo data.

8. The disk drive according to claim 1, wherein,
15 when the head overshoots the target track with
the seek operation by the second velocity control, the
controller positions the head at a current track at
which the head is located or a track in the vicinity
thereof based on the servo data read out from the
20 current track, and

drives and controls the actuator so as to restart
the seek operation for the target track using the
track at which the head is positioned as a seek start
position.

25 9. The disk drive according to claim 1, wherein,
when the head passes the non-servo range, the
controller calculates the velocity required for the

seek operation according to the seek start position
calculated based on the servo data obtained
immediately before passing and a moving distance
calculated based on a distance of the non-servo range;
5 and

drives and controls the actuator so as to move
the head at the calculated velocity.

10. A method of head positioning in a disk drive
having a disk medium including tracks each including a
10 data area and a servo area, and a non-servo area
composed of a track not including the servo area; and
a head configured to execute reading or writing of
data with respect to the data area or reading of servo
data from the servo area, the method comprising:

15 setting a target track on the disk medium;
determining whether or not the non-servo range is
included in a range of moving the head up to the
target track;

when the non-servo range is not included,
20 executing a seek operation by first velocity control
in which the head is moved to the target track using
the servo data; and

when the non-servo range is included, executing a
seek operation by second velocity control for the head
25 to pass the non-servo range at a velocity calculated
based on a moving distance of the non-servo range.

11. The method according to claim 10, wherein,

in the execution of the second velocity control,
the moving velocity of the head for passing the non-
servo range is calculated using the servo data from
the servo area included in a track adjacent to or in
5 the vicinity of the non-servo range.

12. The method according to claim 10, wherein,
on the disk medium, non-data track areas are set
with respect to tracks adjacent to the non-servo
range, the non-data track areas being disabled to use
10 the data area but enabled to read out servo data from
the servo area, and

in the execution of the second velocity control,
the moving velocity of the head for passing the non-
servo range is calculated using the servo data from
15 the servo area included in each of the non-data track
areas.

13. The method according to claim 10, further
comprising:

when the head overshoots the target track with
20 the seek operation by the second velocity control,
executing a correction seek operation in which the
head is moved to the target track.

14. The method according to claim 10, further
comprising:

25 when the head overshoots the target track with
the seek operation by the second velocity control,
positioning the head at a current track at which the

head is located on a track in the vicinity thereof
based on the servo data read out from the current
track; and

restarting the seek operation for the target
5 track using the track at which the head is positioned
as a seek start position.

15. The method according to claim 10, wherein,
when the head passes the non-servo range by the
execution of the second velocity control, the velocity
10 required for the seek operation is calculated
according to the seek start position calculated based
on the servo data obtained immediately before passing
and the moving distance calculated based on the
distance of the non-servo range.